

Klein

BRIDGER 1966

FOREST INSECT CONDITIONS ON THE BRIDGER NATIONAL FOREST 1966

The following is an evaluation of forest insect activities on the Bridger National Forest this year. This material was compiled from aerial survey reports, from special spruce budworm evaluation surveys and by periodic visits by entomologists to specific problem areas. A map of the Bridger Division showing the location and extent of insect infestations as recorded during the aerial survey is attached. A similar map of the Wyoming Division was mailed earlier.

The most important forest insect problems on the Forest this year are the mountain pine beetle, spruce budworm and Douglas-fir beetle. Briefly, an increase in tree killing by the mountain pine beetle occurred in the Bridger Division but a slight decrease was experienced in the Wyoming Division. Overall, epidemic conditions with a static to increasing trend will prevail in 1967. The area of spruce budworm damage to Douglas-fir, true fir and spruce increased from 10,000 acres last year to over 33,000 acres this year. Defoliation ranged from light to moderate with little change in either intensity or extent of damage forecast for 1967. The Douglas-fir beetle continued to kill Douglas-fir in specific areas with increased activity expected next year.

Mountain pine beetle, Dendroctonus ponderosae

The mountain pine beetle continues its slow but relentless depletion of lodgepole pine in portions of the Forest this year. Relative to the status of the beetle last year as reported by aerial surveys, tree killing decreased on the Wyoming Division but increased on the Bridger Division. Over the Forest as a whole, aerial surveys reported approximately 13,500 faded trees this year - 7,000 on the Bridger Division and 6,500 on the Wyoming Division. The location of the infestation centers, both major and minor, are shown on the aerial survey map. A breakdown of mountain pine beetle conditions by Divisions follows:

Bridger Division

Serious infestations persist around New Fork Lake, on the north side of Willow Lake and the south side of Half Moon Lake. A rather extensive but less threatening infestation continues in mixed lodgepole - fir stands in the drainage between Rim Station and Loomis Park. This infestation, incidentally, is actually an extension of the huge outbreak to the south on Kismet Peak and Signal Hill. Several small scattered infestations were recorded near the Wilderness Area boundary to the north of Half Moon Lake and near Surveyor Park, but they are in mixed type and it is doubtful whether there remains enough lodgepole of sufficient size to maintain much less increase the infestation.

Biological evaluations were made in Spring Creek Park, Half Moon Lake, on both sides of New Fork Lake, and north of Willow Lake. With the exception of Willow Lake, brood counts were heavy and indicated epidemic conditions. Brood counts in the Willow Lake infestation were considerably lighter indicating an endemic situation with a decreasing trend. A slight

increase in the ratio of new attacks to old faders was evident in all of the other areas sampled, indicating increased tree killing in these areas next year. Most of this dying lodgepole pine is in or near heavily used recreation areas. Dead and dying trees can be seen along the Elk Park entrance road and from vantage points in other nearby scenic areas. Dead and dying lodgepole pine trees are apparent also along the south shore of Half Moon Lake.

There is a possibility that some infested lodgepole pine may have been overlooked by the aerial observer between Boulder Lake and South Fork of Silver Creek. The flight was made on October 4, the day following a light snowfall. Many of the lodgepole crowns retained the snow thereby hiding any unusual discoloration, but by mid-morning, the snow had melted and the survey progressed without further difficulties.

Wyoming Division

Rather extensive infestations containing relatively small and scattered groups of faded lodgepole pine exist on the south side of the Little Greys River between Fire Trail Creek and Aspen Hollow, along the main fork of the Greys River between Weiner Creek and White Creek and across the heads of the south and Middle Forks of Beaver Creek on the east side of the Division. A much more concentrated and aggressive infestation is in Grizzly Basin. This is probably the most serious single mountain pine beetle outbreak on the Forest this year. Relatively scattered outbreaks of lessening intensity persist in several of the tributaries of Salt Creek in the western part of the Division.

The infestations on the east side of the Division are losing momentum. Biological investigations indicate decreasing activity in Beaver, South Piney and Cottonwood Creeks. In these areas infested and uninfested lodgepole pines are mixed with nonhost spruce and fir. In Beaver Creek, past and present logging activities have reduced the beetle hazard by removing the larger, more susceptible trees. The beetle is barely able to sustain itself in small individual widely scattered trees.

Different conditions exist in the Greys River infestations, however. Evaluations of infested timber indicate an epidemic situation with a possible increasing trend in Deadman Creek, Murphy Creek and Grizzly Basin. More trees will be attacked in these areas next year unless control is undertaken or natural factors intervene. The number of new attacks was less than the number of 1965 attacks in the Gomm, Christopher Creek area and in Giraffe Creek, indicating receding trends there.

The infestation in Robinson Creek is confined to a narrow strip of lodgepole pine along the west side of the Creek. Last year's aerial survey reported 3,000 - 4,000 faded trees; this year the estimate dropped to 1,700. Although these are only estimates, the difference between this and last year's estimate is certainly indicative of a declining trend. It is doubtful if there is sufficient host material left for the beetle to subsist at the present level for another year. There is always the

possibility of a westward spread into the already infested lodgepole on the Caribou National Forest, but not elsewhere because of the lack of contiguous host material.

Spruce budworm, Choristoneura fumiferana (Clem.)

This is the second consecutive year of observed spruce budworm activity on the Bridger National Forest. Originally confined to the Greys River and Little Greys River drainages, the infestation has extended itself outward in practically all directions with the most noticeable movement being to the north on the south side of the Snake River. In some areas defoliation intensity increased slightly but not enough to produce any significant damage. The heaviest noticeable defoliation encompassed some 800 acres of moderately damaged Douglas-fir, alpine fir and Engelmann spruce between the south fork of Little Greys River and Stewart Creek. Elsewhere defoliation remained in the light category. A resumé of infested acreage for 1965 and 1966 by defoliation categories as determined by aerial surveys follows:

Year	Light	Medium	Heavy	Total
1965	10,000	-	-	10,000
1966	33,000	800	-	33,800

On-the-ground examinations supported these aerial findings. Although defoliation was generally widespread in the areas examined it was of light intensity with no immediate threat to the affected trees.

This spruce budworm infestation is one of the few infestations in the Region that did not decline this year. Unseasonable subfreezing temperatures last fall and again this spring caused a drastic budworm decline on the Salmon, Challis, Payette National Forests and portions of the Targhee National Forest in Idaho and on the Fishlake National Forest in Utah. For reasons unknown, budworm infestations on portions of the Sawtooth, Targhee and Bridger National Forests continue to persist.

Reliable predictions as to population trend and defoliation can be made from systematic sampling of Douglas-fir foliage for overwintering egg masses. Collection areas, egg mass counts for this year and last and defoliation estimates for 1967 follows:

	Egg masses/1000 sq. in.		Predicted	Trend
	1965 (No.)	1966 (No.)	Defoliation 1967 (Percent)	
Bailey Lake	12.7	0.1	15	Down
Porcupine Creek #1	3.7	5.73	25-50	Static
Porcupine Creek #2	-	2.69	15	Unknown

Intensity and extent of defoliation in 1967 will not change appreciably from that experienced this year. Moderate to light defoliation will occur in Grizzly Basin, between Stewart Creek and south fork of Little Greys River, with light to negligible damage occurring elsewhere. The infestation will be checked next spring and summer and the Forest will be promptly notified of any unexpected change.

Douglas-fir beetle, Dendroctonus pseudotsugae Hopk.

The Wyoming Division of the Bridger National Forest is one of the few areas in the Region where the Douglas-fir beetle has maintained consistent activity. In other areas tree killing by this insect has declined. The heaviest depredation is in old growth Douglas-fir stands on the south side of the Snake River. Group killing was also particularly severe in Cottonwood, Mud and Slide Canyons east of Smoot, Wyoming. Less severe patch killing of smaller 3 - 60 tree groups has occurred in other areas of the Forest this year.

No ground evaluations were made in Douglas-fir beetle infestations this year. An attempt was made in mid August to examine a huge group containing an estimated 350 faders at the head of an unnamed canyon between the Snake and Greys River (see map). At this time the beetles had flown, and although a rather intensive search was made, no new attacks were found. This is characteristic of Douglas-fir beetle movement, for unlike the mountain pine beetle whose spread appears omnidirectional, the Douglas-fir beetle appears to move in mass in one direction to an altogether new area providing, of course, that host trees are available.

Although specific information on the status of the beetle is lacking, a slight but steady buildup can be expected in 1967. It is suspected that the low moisture conditions experienced this summer may have pre-conditioned trees in some areas to attack.

WILLIAM E. KLEIN, Entomologist